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CONSERVATION

Research and conservation of historic decorative schemes in the built environment

2017

Project Name: Decorative Schemes at Yr Ysgwrn

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1.0: Outline brief & Method

Fig.1: The Farmhouse, Yr Ysgwrn



Yr Ysgwrn is a traditional Welsh farmhouse believed to date to the 1830's and listed Grade II*. The farmhouse is the focal point of a number of related buildings all sitting within the curtilage of a wider farm complex and was the home of the poet Ellis Humphrey Evans, better known by his bardic name, Hedd Wyn.

Hedd Wyn was tragically killed at the Battle of Pilkem Ridge in 1917 and subsequently Yr Ysgwrn has been kept in the Evans family who have welcomed visitors to the site that are fascinated by Hedd Wyn's story¹.

¹ Yr Ysgwrn (2014) [www] available from <http://www.eryri-npa.gov.uk/a-sense-of-place/yr-ysgwrn>, SNPA

In 2012 the Snowdonia National Park Authority (SNPA) and its partners secured Yr Ysgwrn for the nation and appointed Purcell as consultants to produce a Conservation Plan in support of their bid for capital funding from the Heritage Lottery Fund.

One component of the plan is an architectural paint research exercise to establish the decorative history of the interior spaces, namely: the cegin, parlour, pantry and buttery area, entrance hall, stairs and first floor rooms

In pursuit of this Lincoln Conservation were commissioned by SNPA to remove a number complete paint samples from key areas for laboratory analysis to ascertain the nature and colours of the historic decorative schemes applied over time.

All removed samples were mounted in cross section in polyester resin and polished back to reveal the stratigraphy of the paint schemes applied over time. Samples were examined using optical microscopy under both simulated daylight and ultra-violet fluorescence. Simulated daylight provides an indication of colour and highlights dirt layers between paint schemes (assisting the distinction of primers and top coats). Ultra-violet light causes lead and zinc oil paints and varnish coatings to fluoresce in a characteristic manner, which in turn helps to date the paint layers and tie together common datum points during the analysis.

This report will present a number of annotated microscope images displaying the paint samples removed, along with accompanying narrative. All samples should be read with the earliest layers at the base of the image, with subsequent paint schemes applied directly above, as they would have been in real time.

2.0: Research Results

2.1: The cegin

Fig.2: The current appearance



In a traditional Welsh home the cegin was the focal point of family life. It was where most of the family's indoor activities took place – food preparation, cooking, eating, child rearing and craftwork etc. It was also the scene of prestigious activities and where family events were celebrated and visitors entertained². In every respect the “heart of the home”.

² Bebb, R. (2013) *Yr Ysgwrn Furniture Collection – Options for Interpretation and Display*, unpublished.

At Yr Ysgwrn the walls of the cegin are wall papered and a large sample of the thick accumulated layers has been removed from behind a press cupboard next to the entrance door and separated in the labs at the University of Lincoln. Broadly speaking the wall papers are represented by a remarkable 26 layers with the earliest dating to the late C19 through to the current wood effect paper possibly dating to the 1970's. The ceiling is also covered in lining paper with the supporting joists picked out in black paint. The ceiling paper is extensively peeling away from the timber substrate beneath, embrittled, dirty and torn in a number of areas.

Behind the layers of wallpaper are traces of earlier ochre coloured distempers still clinging to the lime plastered walls.

Fig.3: Traces of ochre distemper inside the window reveal



Physical paint samples were removed from both doors (entrance door and to the maid's room), door frames, mantelpiece above the fireplace, window seat and the ceiling boards beneath the lining paper.

The following annotated microscope images display the chronology of the paint schemes applied.

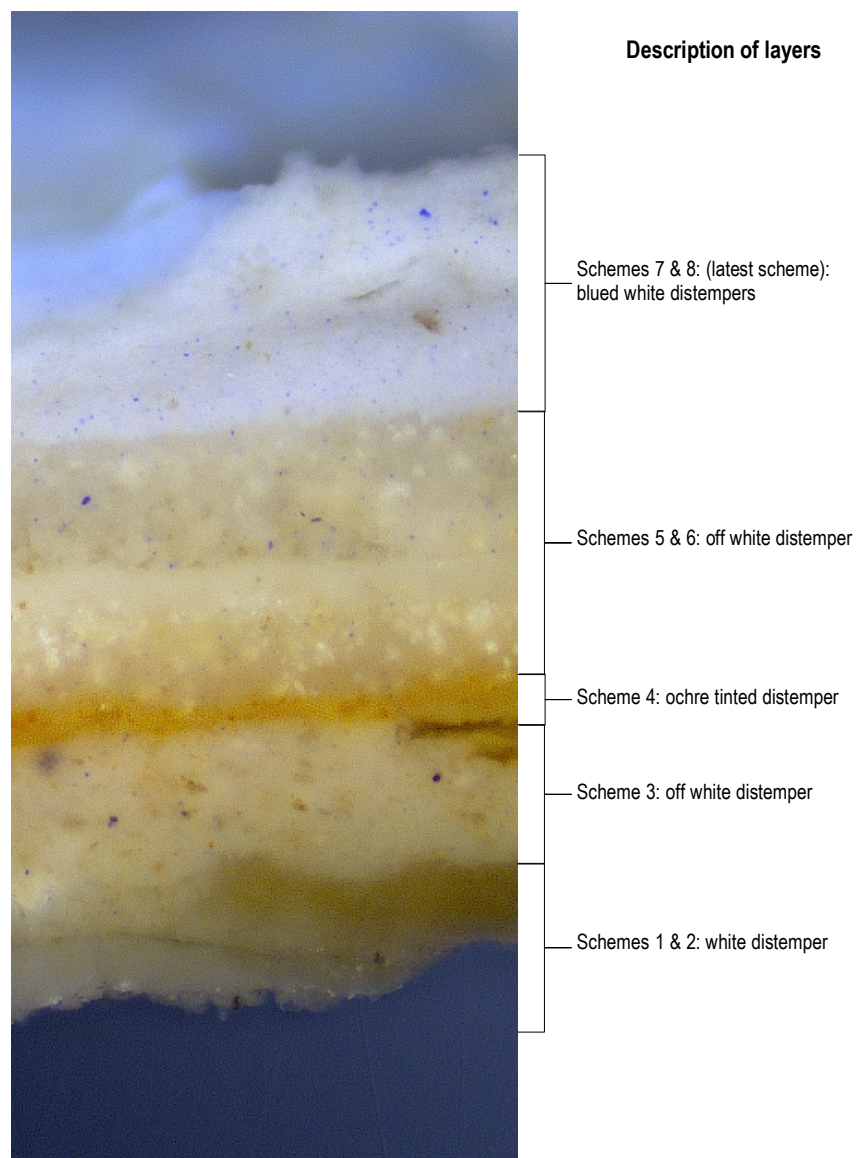
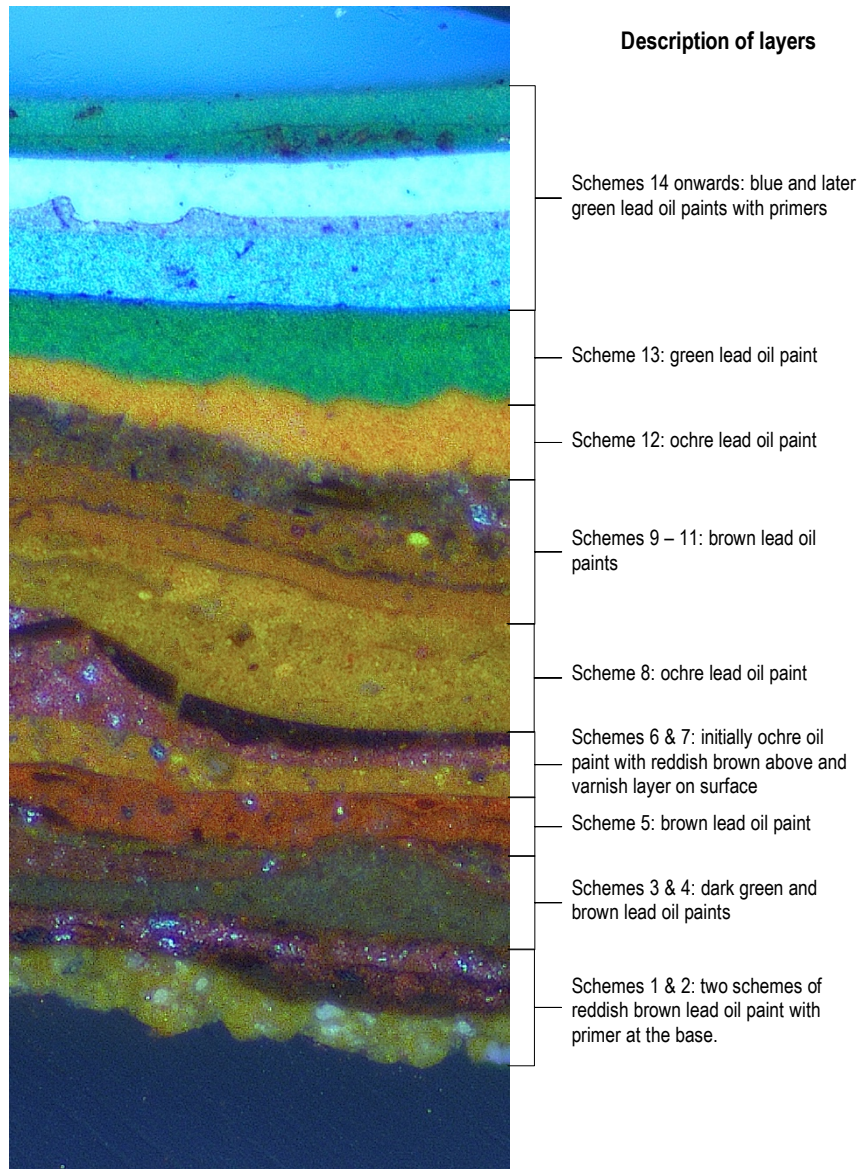
Fig.4: Sample 3.10 (X100) ceiling boards beneath lining paper**Fig.5: Sample location**

Image of the ceiling boards just in front of the window clearly showing the white distempers and traces of ochre tints.

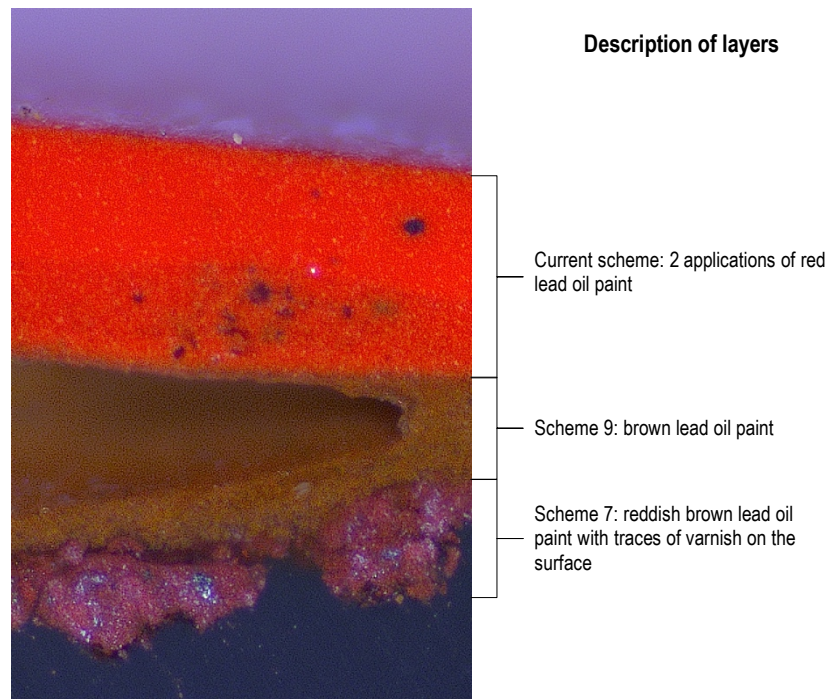
The white distempers at the base of the sample are the earliest decorative scheme with the latest blued white distempers at the top of the image typical of the late C19/early C20. This suggests the earliest white schemes may be coeval with the mid C19 or possibly earlier.

Fig.6: Sample 1.1 (X100) Entrance door frame**Fig.7: Sample location**

The sample cross section displayed left was removed from the entrance door frame into the cegin. The earliest schemes at the base of the image are a primer coat beneath two schemes in reddish brown lead oil paint. The subsequent decorative finishes are stacked above and annotated accordingly. Understandably, the samples removed from the door itself display an identical chronology and there is no evidence for the early decorative schemes being stripped from this area. It must be assumed schemes 1 and 2 are coeval with the 1st half of the C19. The sample removed from the

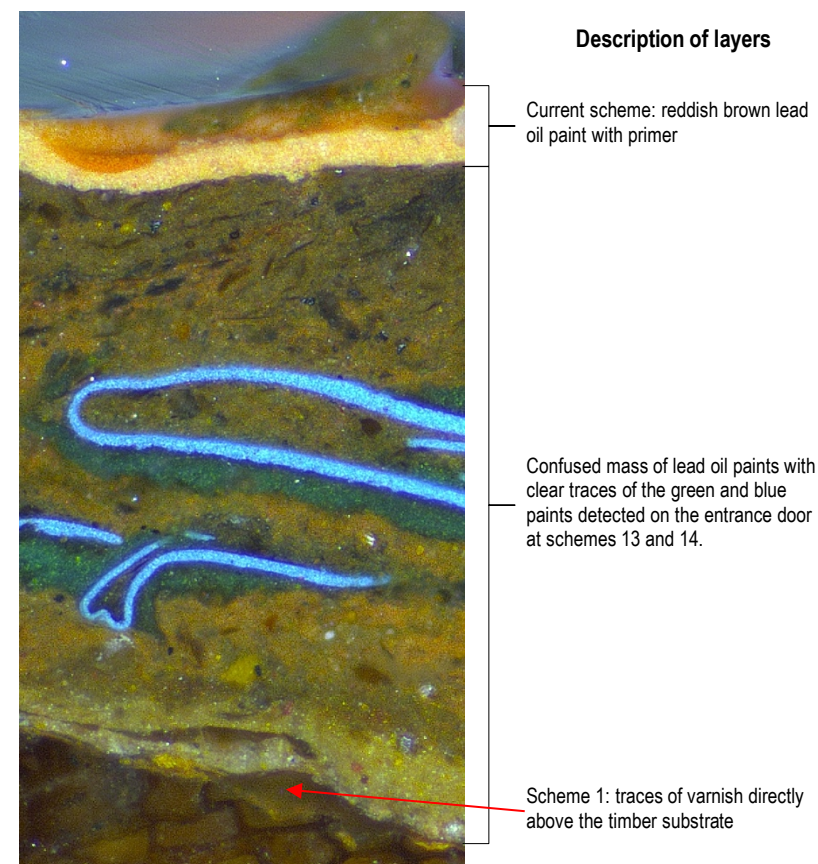
red painted inside face of the door displays only 3 discernable paint schemes and is displayed below.

Fig.8: Sample 1.5 Entrance door inside face

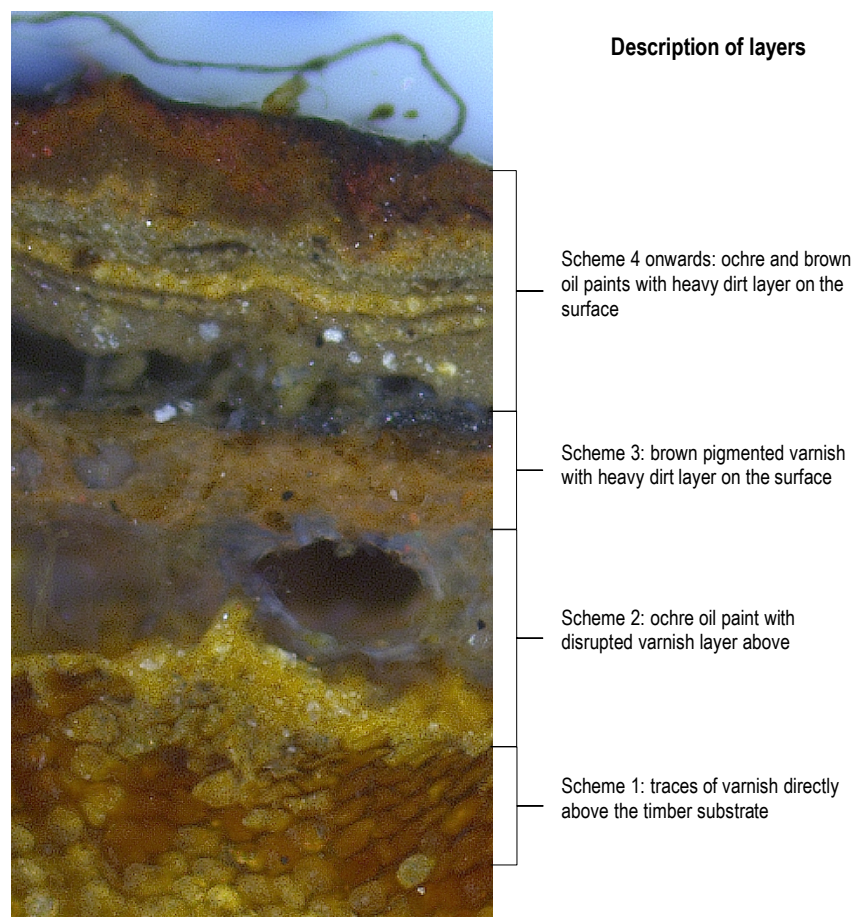


The inside face of the door has been stripped on three occasions in the past. The early layers (schemes 1 to 6) are missing completely and were cleaned off prior to the application of scheme 7 in reddish brown. This layer directly corresponds to scheme 7 on the outside face of the door. The surface was cleaned back again prior to the application of the brown oil paint at scheme 9 and again before the current red was applied.

Fig.9: Sample 2.7, The Window Seat



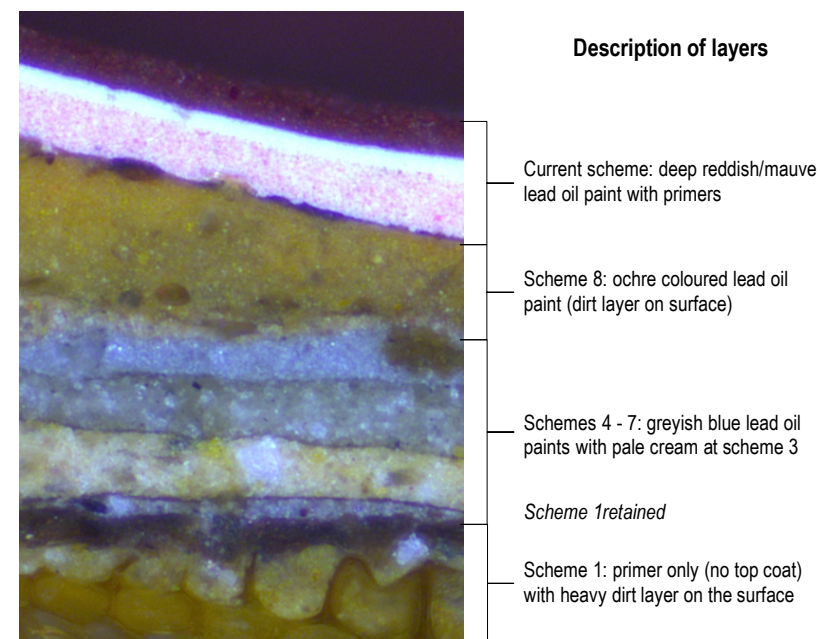
The window seat appears to have been heat stripped prior to the application of the current paint scheme leaving the earlier paints in a confused mass and out of context. However, there are clear traces of a natural resin varnish layer directly above the timber substrate that was in place for some considerable time and should be considered the earliest defined decorative scheme throughout the C19 and into the C20.

Fig.10: Sample 2.6 Wooden mantelpiece

The mantelpiece has not been painted for a considerable time with a very heavy blackened dirt layer on the surface. There is trace evidence of an early varnish directly on the timber substrate and as is the case with the window seat, this should be considered the earliest decorative scheme. Subsequently the surface was cleaned, painted in an ochre oil paint and again varnished. Another varnish was applied at scheme 3, but in this instance pigmented dark brown and has a very heavy sooty dirt

layer on the surface. Subsequent schemes were applied in ochre and brown lead oil paints and all have sooty deposits accumulated on their surfaces.

Within the cegin, further samples were removed from the door into the maid's room and it's associated door frame.

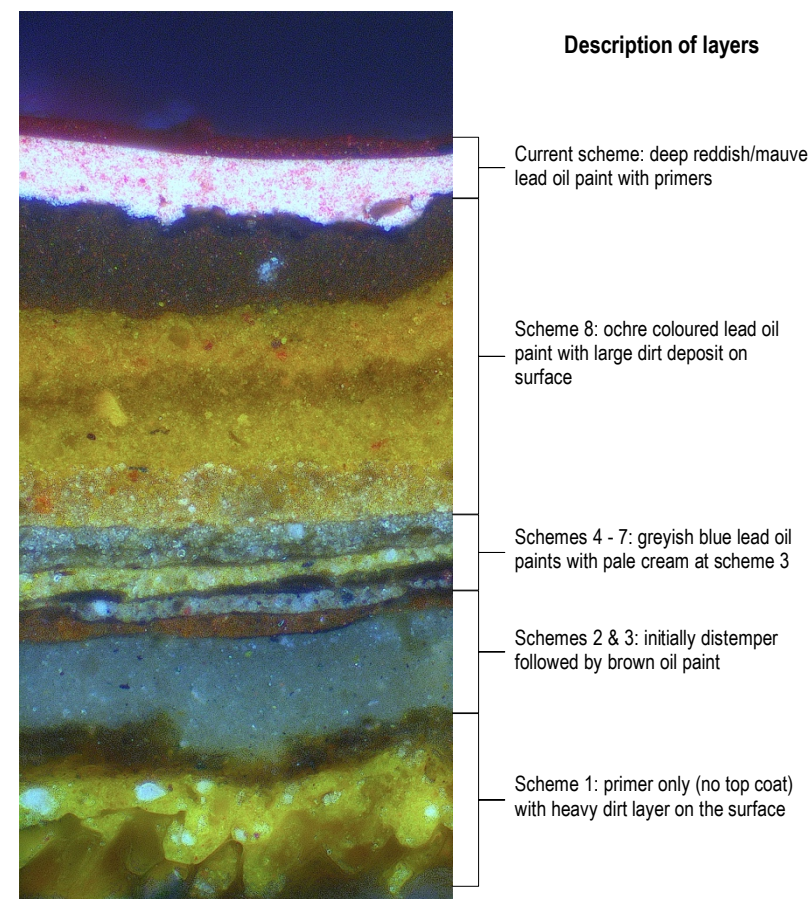
Fig.11: Sample 2.8 Door to Maid's Room

The earliest paint scheme on the door to the maid's room facing into the cegin was simply an ochre coloured primer with no top coat applied, which was retained until scheme 4, hence the heavy layer of dirt accumulated on the surface. Subsequent lead oil paints were applied in greyish blue, pale cream and ochre prior to the application of the scheme we see today in deep reddish mauve.

It is interesting to note there are two doors facing into the cegin and both are currently painted in different colours. Furthermore there is only one historic paint scheme corresponding on both doors (the ochre at scheme 8), although it should be noted the inside face of the entrance door has been cleaned back in the past with the corresponding ochre on the outside face of the entrance door (fig.6). This suggests the two doors have a history of predominantly being painted differently or one of them has been moved from another location into the cegin. However, both doors are of identical construction and have the same strap hinges without any evidence of scarring where earlier fittings may have been removed or otherwise adapted. This suggests the Maid's Room door is an original feature that was initially simply primed and left for a long period of time without a top coat, prior to being painted in greyish blue and later cream.

The microscope image opposite (fig.12) is the sample removed from the door frame to the Maid's Room. Compared to the door there is an identical primer at the base (scheme 1) with a layer of dirt on the surface. Above this are two further schemes not evident on the door itself (initially in distemper followed by a brown oil paint) suggesting they were painted in isolation. The distemper may be a residue left on the door frame when the walls were distempered and if so, pre-dates the wallpapers in the cegin. The subsequent layers in greyish blues and creams match the corresponding paint layers on the door itself, up to the now familiar ochre oil paint at scheme 8.

Fig.12: Sample 2.9 door frame to Maid's Room



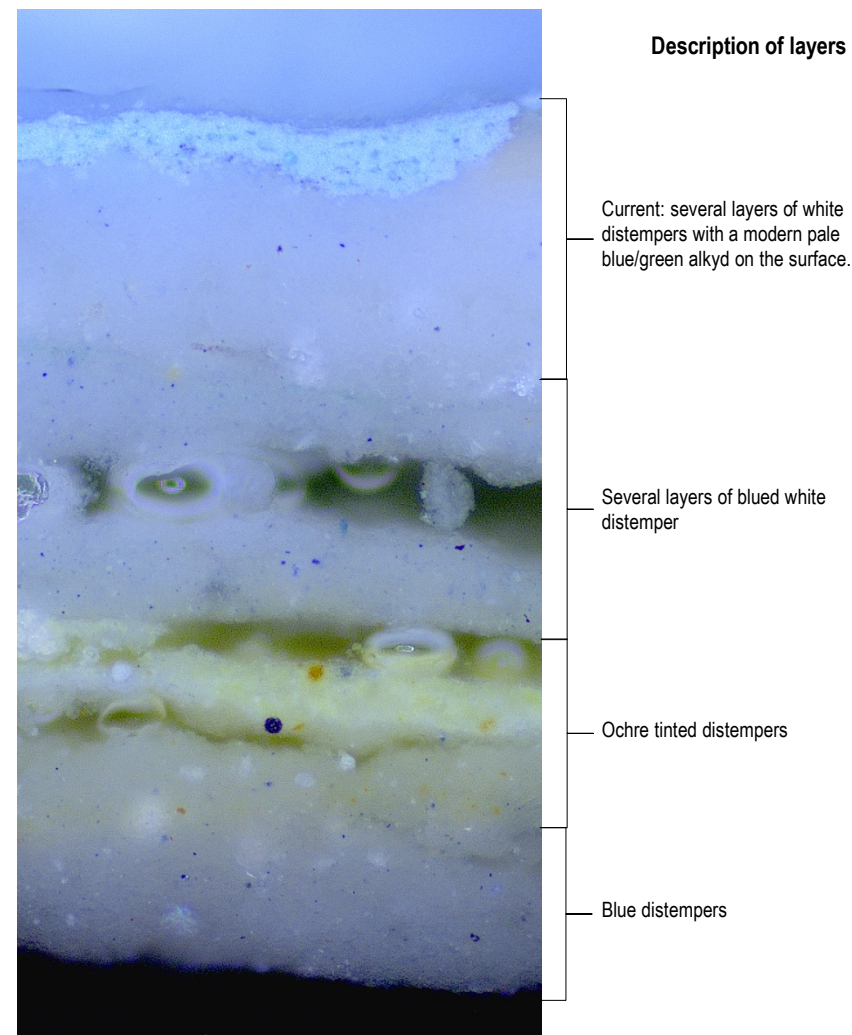
2.2: The Buttery & Pantry Area (fig.13)



This area is currently uniformly painted in soft white distempers overlaid in some areas with a modern alkyd paint. There are traces of blues and cream/ochre evident in some areas beneath the surface. Samples were removed from both the walls and timber panelling with both displaying an identical paint chronology. The earliest evidence is a blue distemper, followed by several ochres, blued whites and finally white.

Note: it is impossible to define the number of coats applied; distempers are essentially chalk and pigment carried in animal glue. Each successive distemper application reactivates the glue binder in the layers beneath causing them to merge and appear as a single mass.

Fig.14: Sample 3.11 The Stone walls



2.3: The Stairs and first floor level

Fig.15: Sample 4.14 stair spindles

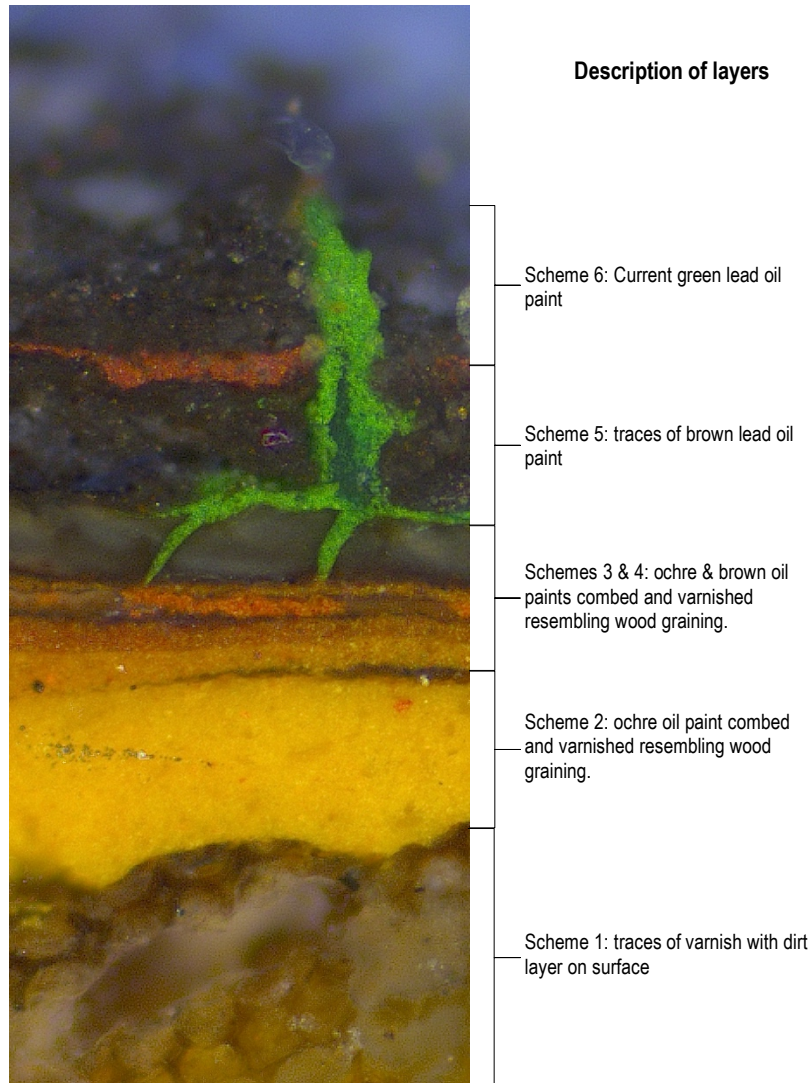


Fig.16: Sample location



The earliest decorative scheme on the stair spindles is a varnish with a surface dirt layer. Following this are three schemes of ochre oil paint with a brown oil paint combed onto the surface and varnished to resemble wood graining. These three combed schemes appear to date to the mid to late nineteenth and into the twentieth century. Above the combed layers are traces of brown oil paint with the current green scheme visible above. The upper layer (in green) was applied to an extremely degraded and dirty surface and has flowed down beneath the brown oil paint and is embedded into the varnish layer at scheme 4. This suggests the combed decorative effect was left in place for a considerable time prior to being painted out in brown lead and later green oil paints.

Fig.17: Sample 4.15/16 Door & door frame into blue bedroom

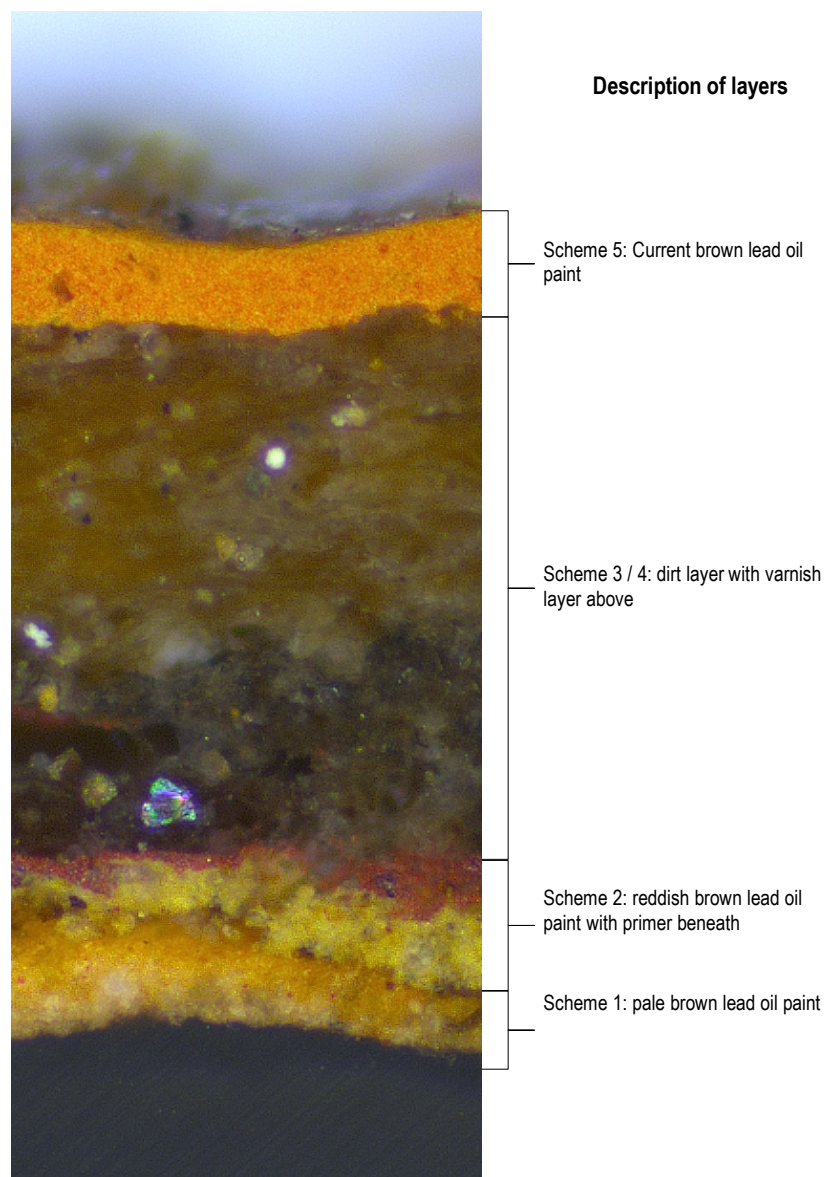


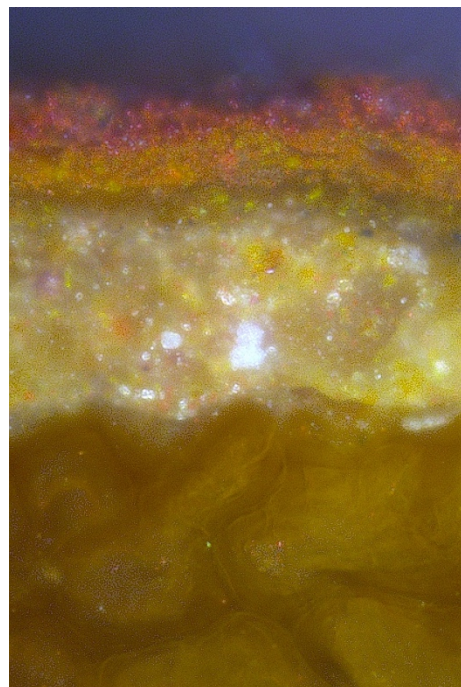
Fig.18: Sample location



The sample left (fig.17) was removed from the door frame facing into the landing. Samples removed from the door itself are identical but lacking the varnish layers at scheme 3 / 4. It is therefore likely the painted door frames on the upper floor were varnished with the combed wood graining on the stair spindles (without combing). The reddish brown at scheme 2 corresponds to the same colour scheme detected at

scheme 2 on the entrance door frame to the cegin. An identical paint chronology was also detected on the window seat in the bedroom (see fig.19 below).

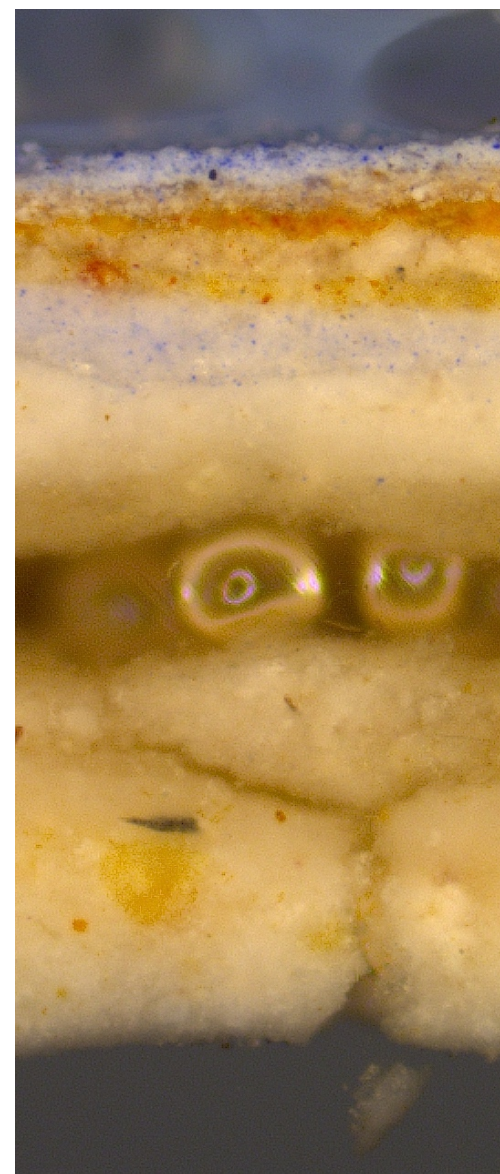
Fig.19: Sample 4.18 window seat, blue bedroom



Description of layers

Two schemes of lead oil paint in pale brown and reddish brown. Identical to the bedroom door and doorframe.

Fig.19: Sample 5.19 Bedroom Walls



Description of layers

Scheme 9: blue distemper

Schemes 5 – 8: ochre distempers

Scheme 4: blue distemper

Schemes 1 – 3: pale ochre and off white distempers

The bedroom walls retain an early lime plaster with several coats of soft distemper immediately above. Initially in pale ochre and off white, then blue with further ochres and finally the strong blue we see today.

There are traces of wallpaper still clinging to isolated areas of the surface, but these fragments are too small to be able to define a pattern repeat (see fig.20). Furthermore, a comparison with the wallpapers recovered from the cegin does not reveal an identical paper.

Fig.20: Wallpaper fragment, blue bedroom



2.4: Fig.21 Beudy Llywd



Beudy Llywd is a remote barn set apart from the main complex of buildings surrounding the farmhouse and is sited adjacent to the main access road. The barn is currently in a dilapidated state with limited potential for the analysis of historic paint schemes and for this exercise sampling was focussed on the two doors shown in the above image. Both have clearly been repaired and altered over the years, primarily with replacement vertical planking and corresponding horizontal battens on the inside faces to maintain structural integrity. Two samples were removed: a trace of green paint on the inside face of the west facing door and the red paint on the outside face.

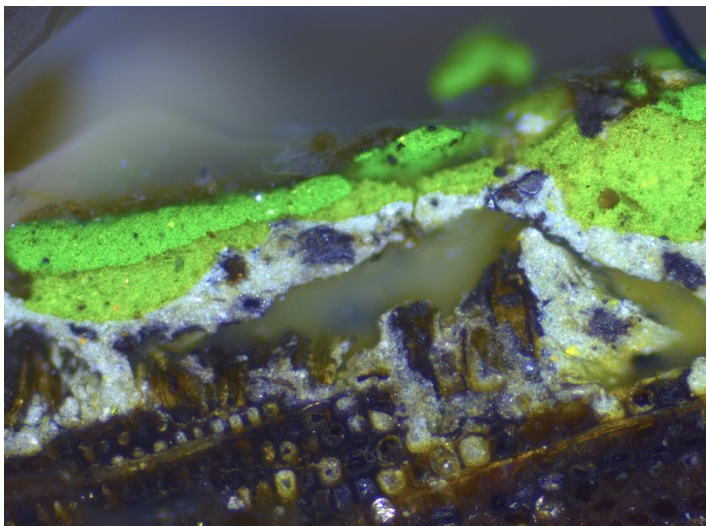
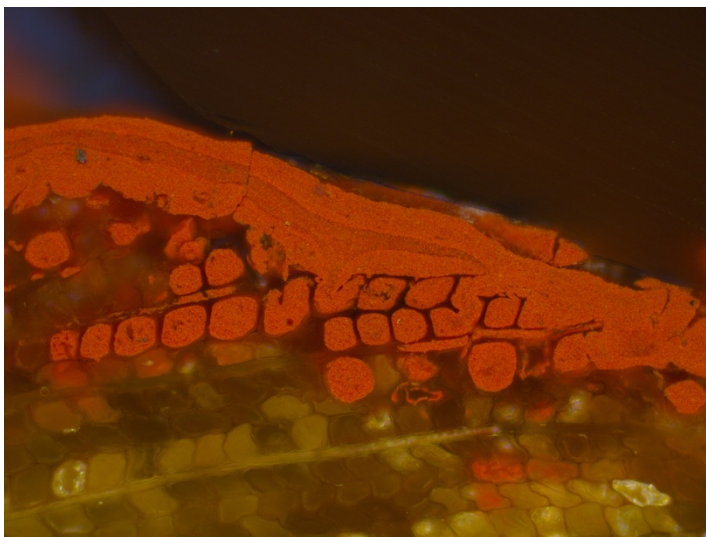
Fig.22: North facing door (external)



Fig.23: West facing door (internal)



Traces of green oil paint clinging to the surface of the original section of the door. The blue painted planking is clearly a later repair and considered out of context.

Fig.24: Sample 6.25 west facing door (inside)**Fig.25: Sample 6.23 west facing door (outside)**

The inside face of the door has a coarse grey lead primer at the base with a green lead oil top coat that was subsequently re-painted once in the same green.

This appears to be identical to the greens detected inside the farmhouse and is likely to date just after 1945.

The outside face of the door (see fig.26) has no primer and has been painted three times in red lead oil paint. Potentially, this could be the same paint used on the inside face of the door into the cegin.

Fig.26: West facing door

3.0: Conclusion

Firstly, it is important to note that no alkyd oil paints have been detected at Yr Ysgwrn. Alkyds were introduced for wide domestic use after WW2 (into the 1950's), but with considerable overlap with lead oil paints leaving a period throughout the 1960's and 1970's where both were in use – even at times being mixed together. This indicates the painted surfaces on the joinery at Yr Ysgwrn (greens, reds and browns) have been in place for some considerable time and should be considered historic and potentially just cleaned and retained.

Two historic black & white photographs of the cegin are included opposite.

Although undated, the photographs display the wood effect wallpaper currently extant in the cegin and is typical of the early to mid 1970's. The ceiling joists are picked out in black with a white background between. It is likely this is the ceiling paper currently in place and although unproven suggests this was installed at the same time as the wood effect wallpaper, or soon before. No black paint was detected on the joists themselves. There are several distemper schemes beneath the ceiling paper indicating this was originally washed with a white distemper with evidence for later blued whites and ochres.

The ochres on the ceiling appear to match the ochres applied to walls prior to the first wallpapers that were hung in latter part of the C19.

Some of the samples removed from the cegin appear confused because there is clear evidence of surfaces being stripped prior to re-decoration (notably the door and window seat) and given the evidence that the door to the maid's room has a history of being painted a different colour to the entrance door the precise allocation of later colours to areas cleaned back remains unclear.

Fig. 26: Historic image of the cegin (hearth)



Fig.27: Historic image of the cegin



The walls in the buttery/pantry have several layers of thick distempers in whites, blues and ochres and doubtless would have been frequently refreshed to maintain and present a clean environment suitable for food preparation and storage.

Moving upstairs; the green paint applied to the stair spindles appears to be coeval with the green paint detected elsewhere throughout the farmhouse and on the door at Beudy Llywd, with strong evidence for the earliest decorative scheme being combed and varnished to resemble wood graining. Further varnishes were found on the doorframes on the landing dating to the same period, but not on the doors themselves. The bedroom walls also have an accumulation of distempers with traces of later wall papers still clinging to the surface in isolated areas.

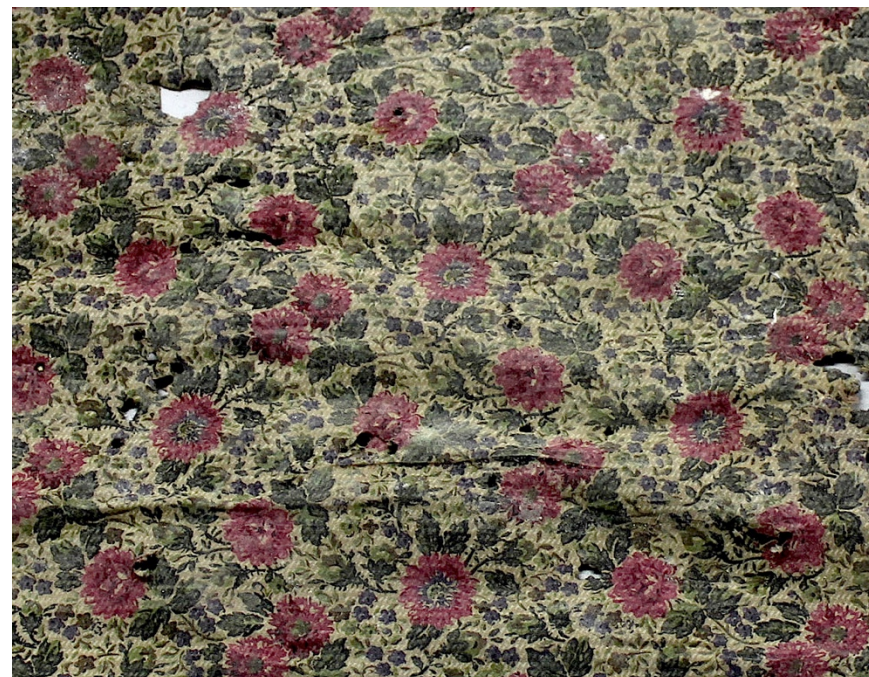
What was the appearance of the interiors during the Hedd Wyn period?

The ceiling in the cegin was certainly coated in soft distemper with blued whites particularly favourable during the nineteenth and into the twentieth century. A small amount of blue pigment was frequently added³ resulting in a barely perceptible blue cast in the belief this “whitened” the overall appearance (in the same manner laundry blue was added to white textiles). Soft distempers are simply chalk and pigment carried in an animal glue binder (typically rabbit skin glue) and periodically turned and refreshed. The walls in the cegin were initially also distempered in conjunction with the ceiling with wallpapers introduced towards the end of the nineteenth century. The

³ *The Paper Hanger, Painter, Grainer and Decorator's Assistant*, p.79 (1879) C.H. Savory (pub), Cirencester & London

papers hung in the cegin are reported separately with a busy pink and green floral paper dating to the 1900 – 1914 period (see fig.28 below).

Fig.28: Floral wallpaper (cegin) potentially coeval with the Hedd Wyn period



The paints applied to the joinery in the cegin at this time are speculative due to a lack of consistent evidence and coupled with the fact that some areas have been stripped or cleaned back in the past. However, there are two common schemes in a reddish brown (at scheme 7) and ochre (at scheme 8), both of which could be of the period.


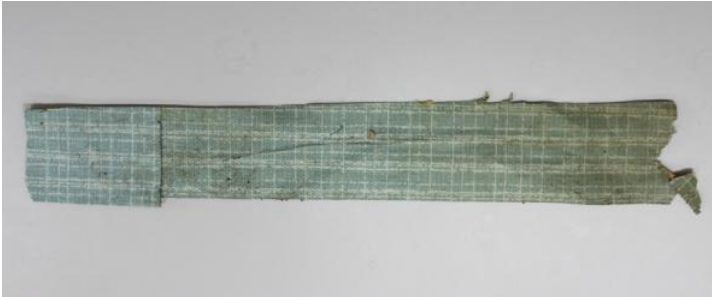
It is likely the stairs either still retained a combed and varnished scheme at this time or were painted in a brown lead oil paint, but without further evidence the precise allocation remains unclear. The early reddish brown oil paint (scheme 2) on the





bedroom doors appears to be identical to the same colour detected at scheme 2 on the door leading into the cegin and pre-dates the Hedd Wyn period. It therefore remains a possibility the current brown scheme is coeval with the early twentieth century and bears witness to the Hedd Wyn period of occupancy.



Virtually all traces of wallpaper have been stripped from the walls of both bedrooms, leaving evidence of a blue distemper on the lime plastered surface, with further ochres and blues beneath. It must remain conjectural as to whether the walls were papered at this time or whether the blue distemper was in place during the early twentieth century.

Yr Ysgwrn wallpapers: inventory



Wallpapers collected from Yr Ysgwrn were separated by Conservators from Lincoln Conservation using mechanical techniques in conjunction with some use of water vapour. Twenty-six discernible layers were discovered, as well as a number of very small fragments which may represent further layers. Following is an inventory of initial findings, based on visual observations made during the separation process. Wallpapers are ordered from top (most recent) to bottom (oldest).



	Layer ref.	Description	Notes
 IMG_0333	N/A	Wallpaper stack prior to separation (from reverse).	
 IMG_0337	10a	Green background intersected with off-white gridlines.	c. 1960s



	Layer ref.	Description	Notes
 <p>IMG_0343</p>	10b	Buff background with repeating lozenge shape. Each lozenge filled with white dots, and diamond pattern in centre.	Small pieces of book/newsprint found on top of this layer. c. 1950s-1960s.
 <p>IMG_0347</p>	10c	Embossed paper. Possibly floral design overlaid with pearlescent 'swirls'.	'E' on selvedge. c. 1950s-1960s.
 <p>IMG_0348</p>	10d	Fan/firework-like pattern in reds, greens and browns.	'English Made' on selvedge. c. 1950s
 <p>IMG_0346</p>	10e	Multi-coloured background overlaid with green lines in a fan-like arrangement.	c. 1950s



	Layer ref.	Description	Notes
	10f	Indistinguishable curvilinear design. Once a light background.	Very dirty. Crown wallpaper sedge. Dating problematic due to condition of wallpaper. Possibly c. 1940s. Further research could be carried out into sedge and pattern design.
	10g	Abstract palm leaf design in browns and green.	Crown wallpaper sedge. c. late 1930s



	Layer ref.	Description	Notes
	10h	Pale diamond pattern in greens, oranges and mauves.	Selvedge: English Made, Reg ^d N° 815050 86M/WPM Design registered in 1936.
	10i	Abstract squares in various pastel shades.	Some pencil marks (IMG_0365). c. 1935.

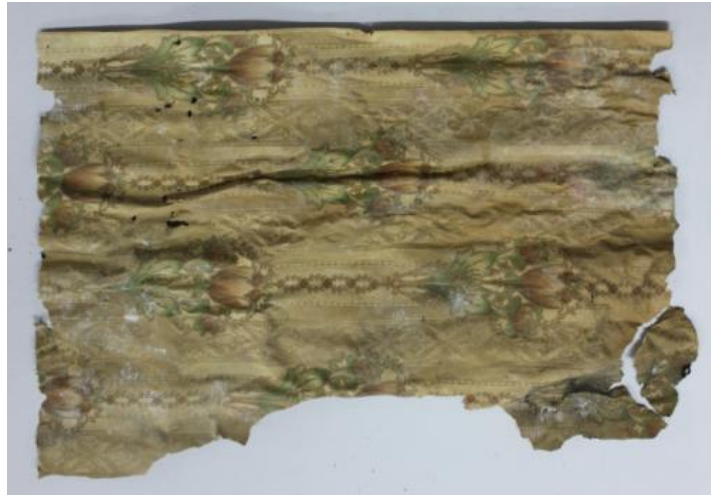
	Layer ref.	Description	Notes
 IMG_0368	10j	Multi-buff background with diamond pattern and stylised poppies in red and green.	Selvedge removed. c. 1934
 IMG_0370	10k	Multi-brown background with squares. Repeating motif of fruit with heavy outlines.	Selvedge removed apart from very small partial section (IMG_0372) – probably reads 'Reg ^d No', but number itself not present. c. 1933

	Layer ref.	Description	Notes
 IMG_0374	10l	Light brown ground. Geometric lines with artificial embossed effect, and red flower motif in a 'Chinese' type style.	Crown wallpaper selvedge (IMG_0376). c. 1931-32
 IMG_0378	10m	Abstract leaves and red berries on a light turquoise-blue ground.	Selvedge removed. c. 1930

	Layer ref.	Description	Notes
 <p>IMG_0380</p>	10n	Broad brown pinstripes with rose-filled cartouche and interconnecting flower garlands.	Selvage has three circles, but no text. c. 1929-30
 <p>IMG_0388</p>	10o	Light coloured ground with outlined cartouche in cream/yellow, filled with fruit and flowers.	Selvage (IMG_0384): English Made R ^D 736323. 3-4 layers thick in places. Design registered in 1928

	Layer ref.	Description	Notes
 IMG_0390	10p	Dark ground with Oriental pagoda motif. Two-tone green vertical bands.	Selvedge (IMG_0391 & IMG_0392): English [shield] Made Trade [crown] Mark Reg ^d 704472. Design registered in 1923-1924 (possibly hung 1925-26 given the dates of preceeding and subsequent papers)
 IMG_0394	10q	Light ground with elaborate flower cartouche and floral garlands.	Very dirty. Elaborate stylised, mirrored 'E' on selvedge. c. 1922-23

	Layer ref.	Description	Notes
 <p>IMG_0399</p>  <p>IMG_0401</p>	10r	Buff ground with alternating blue and white vertical, straight 'ribbons', decorated with small floral cartouche and small flowers respectively.	Selvedge (IMG_0400): Trade [crown] Mark [shield] English Made R ^D N° 695933. Design registered in 1922-1923.
	10s	Buff ground with elaborate design of white pinstripes, trellis and rose cartouche, connected by foliate garlands.	Selvedge (IMG_0402): Reg N° 667219 British Made. Paper thin and acidic. Design registered in 1918-1919.



IMG_0411

10t

Art Nouveau style tulip pattern laid over Art Nouveau style stripes.

Selvedge (IMG_0408): Registered No 668662 British Made.

Design registered in 1918-1919.



IMG_420

10u

Busy pink and green floral pattern. 21.5 inches wide in total (including both selvedges). 20 ³/₄ inches pattern width.

Selvedge (IMG_0421) has circles but no text. Pre 1918. Probably c. 1900s – 1914.



10v

Woodgrain effect.

Woodgrain style paper was produced over a wide range of dates, with very little variation in pattern, which makes dating complex. Probably 1890s-1910s, pre-dates layer 10u.

IMG_0413



IMG_0426



IMG_0414

NB. The following records are unstratified due to the extremely fragmentary nature of the papers.

10w

Indistinguishable blue design, outlined in black.

Very small fragments only, adhering to reverse of 10u (10v, woodgrain, not present in this area).
c. mid-late 19th century.

10x

Indistinguishable design including stylised tulips.

Very small fragments only, adhering to reverse of 10v.
Probably c. 1883-1900s, pre-dates layer 10v.



IMG_0430

10y

Indistinguishable pink design.

Very small fragments only, adhering to reverse of 10u.
Not enough information to date these fragments.

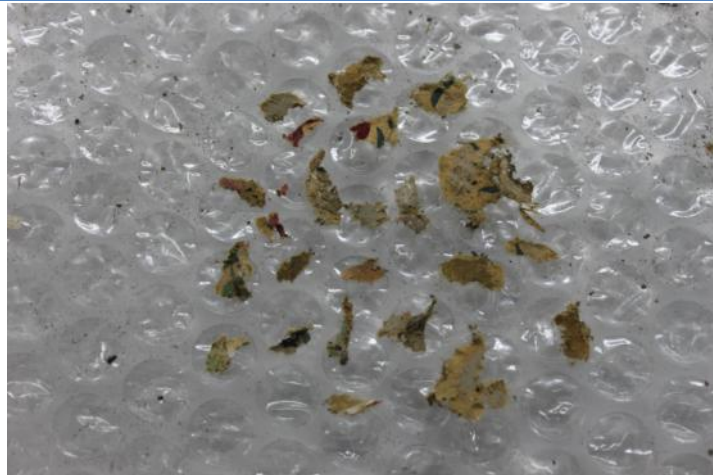


IMG_0431

10z

Various indistinguishable designs.

Various very small fragments, found within frass adhering to 10u.
Not enough information to date these fragments.



IMG_0425



IMG_0429

10zi

Indistinguishable pink and green design.

Very small fragments found within frass.

10zii

Indistinguishable design with pink dots and white.

Very small fragments found within frass.
c. mid-late 19th century

Yr Ysgwrn wallpapers: Summary

The wallpapers examined represent a period of approximately 100 years of occupation of the property, though the early evidence is quite fragmentary, which makes exact dating difficult. The decorative scheme appears to change more frequently in the earlier period (post WW1 to late 1930s). Although we cannot rule out other papers being stripped from the walls, the reverse of the papers found show some transfer of colours, which suggests that the layers are contiguous from the early 1900s onwards. Where the design numbers have been traced to registration dates, it is likely that the papers would have been hung within a couple of years of that date, due to rapidly changing styles at the time.

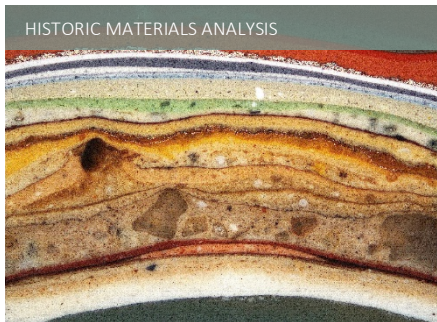
“Trade in wallpapers was conducted via merchants and decorators, largely through the medium of pattern books.... But the majority of consumers chose from the books supplied by a decorator.”⁴ Where a selvedge with makers name is present, they all refer to Crown Wallpapers. This suggests there was a single local merchant, or decorator, who just supplied Crown papers. Further archival research could be carried out to examine this further.

Pattern registration numbers were dated using the National Archives registration records. Where no pattern registration numbers were present, layers have been dated stylistically based on fashions of the period, and considering the layer context. More precise dating of some of the papers may be achievable with further research into Crown Wallpapers, by studying their makers marks and selvedge patterns.

It seems probable that the paper in place during the 1914-1918 period was layer ref. 10u, the pink and green floral pattern. Although this has no makers information on the selvedge, it pre-dates the 1918-1919 layer (10t) and would therefore be the most likely candidate for the First World War era. There is sufficient wallpaper available in this design to make it possible to re-create this pattern.

⁴ Hoskins, L. (Ed). *The Papered Wall*. 1994. p166.

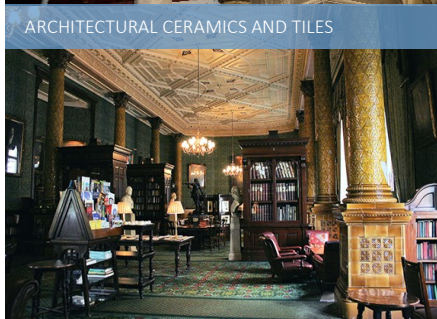
HISTORIC MATERIALS ANALYSIS



HISTORIC INTERIORS



ARCHITECTURAL CERAMICS AND TILES



OBJECT CONSERVATION



DIGITAL HERITAGE



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